

Serial No. 09/937,611
Amendment Dated: October 2, 2006
Reply to Office Action Mailed: May 30, 2006
Attorney Docket No. 010642.50458US

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-2. (Canceled)

3. (Previously Presented) A method for synchronous serial communication as described in claim 26, wherein, when it is required to transmit data, mode information notifying under which mode the transmission of the data will be achieved is attached to the data to be transmitted.

4. (Previously Presented) A method for synchronous serial communication as described in claim 3, 9, 26 or 27, wherein the serial data are divided into blocks by bytes.

Claims 5-6. (Canceled)

7. (Previously Presented) A method for synchronous serial communication as described in claim 3, 9, 26 or 27, wherein, when it is required to transmit a command which concerns with the treatment of data already transmitted, firstly transmitted is command data indicating the current data

carries a command concerning with the treatment of the data already transmitted, and then transmitted is said block information from which it is possible to identify the block(s) to be treated out of the data previously transmitted.

8. (Previously Presented) A method for synchronous serial communication as described in claim 7, wherein said command includes at least either an invert command or a bit shift command.

9. (Previously Presented) A method for synchronous serial communication as described in claim 27, wherein, when it is required to transmit data, mode information notifying under which mode the transmission of the data will be achieved is attached to the data to be transmitted.

Claims 10-13. (Canceled)

14. (Currently Amended) ~~The system of claim 5, wherein:~~ A system for synchronous serial communication which comprises a serial data transmitting component comprising:

a storage means to store data fed by an external device;
a clock that produces a clock signal having clock signal level transitions;

a decision means to calculate a number of clock signal level transitions required for the transmission of said data for each of a number of transmission modes, and to decide which mode will allow the serial transmission of said data to occur in the least number of clock signal level transitions; and

an output means to choose the mode which has been decided by the decision means as allowing the serial transmission of said data to occur in the least number of clock signal level transitions, to read said data stored in the storage means, and to transmit said data through the communication mode thus chosen, wherein

there are available a first mode, which is a serial communication under which data are transmitted without being divided into blocks, and a second mode under which data to be transmitted are divided into blocks, firstly transmitted is block information notifying the block(s) to be transmitted, and secondly transmitted are the data included in the block(s) notified by the block information, and, on the data included in the block(s) not notified, the corresponding previous data stored in a data receiving component are used; and

time required for a data transmission based on the first mode, and time required for the data transmission based on the second mode are calculated, and compared, and transmission of the data is achieved through the mode that is found have less time for transmission of the data.

15. (Previously Presented) The system of claim 14, wherein, when it is required to transmit data, mode information notifying under which mode the transmission of the data will be achieved is attached to the data to be transmitted.

16. (Previously Presented) The system of claim 14, wherein the serial data are divided into blocks by bytes.

17. (Previously Presented) ~~The system of claim 6, wherein:~~ A system for synchronous serial communication which comprises a serial data receiving component comprising:

a storage means to store data;

an analysis means to identify a communication mode of serially received data based on a received mode information; and

a control means to cause the received data to be stored in the storage means according to the mode identified by the analysis means, wherein

there are available a first mode, which is a serial communication under which data are transmitted without being divided into blocks, and a second mode under which data to be transmitted are divided into blocks, firstly transmitted is block information notifying the block(s) to be transmitted, and secondly transmitted are the data included in the block(s) notified by the block

information, and, on the data included in the block(s) not notified, the corresponding previous data stored in a data receiving component are used; and

time required for a data transmission based on the first mode, and time required for the data transmission based on the second mode are calculated, and compared, and transmission of the data is achieved through the mode that is found have less time for transmission of the data.

18. (Previously Presented) The system of claim 17, wherein, when it is required to transmit data, mode information notifying under which mode the transmission of the data will be achieved is attached to the data to be transmitted.

19. (Previously Presented) The system of claim 17, wherein the serial data are divided into blocks by bytes.

20. (Previously Presented) ~~The system of claim 12, wherein:~~ A system for synchronous serial communication which comprises a serial data transmitting component comprising:

a memory coupled to receive and store data fed by an external device;

a clock that produces a clock signal having clock signal level transitions;

a processing unit which calculates a number of clock signal level transitions required for the transmission of said data for each of a number of

serial transmission modes, and decides which mode will allow the serial transmission of said data to occur in the least number of clock signal level transitions; and

a selector unit, which selects a mode which has been decided by the processing unit, to read said data stored in the memory, and to serially transmit said data through the communication mode thus chosen, wherein

there are available a first mode, which is a serial communication under which data are transmitted without being divided into blocks, and a second mode under which data to be transmitted are divided into blocks, firstly transmitted is block information notifying the block(s) to be transmitted, and secondly transmitted are the data included in the block(s) notified by the block information, and, on the data included in the block(s) not notified, the corresponding previous data stored in a data receiving component are used; and

time required for a data transmission based on the first mode, and time required for the data transmission based on the second mode are calculated, and compared, and transmission of the data is achieved through the mode that is found have less time for transmission of the data.

21. (Previously Presented) The system of claim 20, wherein, when it is required to transmit data, mode information notifying under which mode the transmission of the data will be achieved is attached to the data to be transmitted.

22. (Previously Presented) The system of claim 20, wherein the serial data are divided into blocks by bytes.

23. (Previously Presented) ~~The system of claim 13, wherein:~~ A system for synchronous serial communication which comprises a serial data receiving component comprising:

a memory which stores data;

an analysis unit which identifies a communication mode of serially received data based on received mode information; and

a control unit which causes the serially received data to be stored in the memory according to the mode identified by the analysis unit, wherein

there are available a first mode, which is a serial communication under which data are transmitted without being divided into blocks, and a second mode under which data to be transmitted are divided into blocks, firstly transmitted is block information notifying the block(s) to be transmitted, and secondly transmitted are the data included in the block(s) notified by the block information, and, on the data included in the block(s) not notified, the corresponding previous data stored in a data receiving component are used; and

time required for a data transmission based on the first mode, and time required for the data transmission based on the second mode are calculated, and

compared, and transmission of the data is achieved through the mode that is found have less time for transmission of the data.

24. (Previously Presented) The system of claim 23, wherein, when it is required to transmit data, mode information notifying under which mode the transmission of the data will be achieved is attached to the data to be transmitted.

25. (Previously Presented) The system of claim 23, wherein the serial data are divided into blocks by bytes.

26. (Previously Presented) A method for synchronous serial communication, the method comprising the acts of:

calculating an amount of time required for a data transmission based on a first serial transmission mode;

calculating an amount of time required for a data transmission based on a second serial transmission mode;

selecting either the first mode or the second mode so that serial data transmission take less time,

wherein the transmitting of the data in the second mode comprises the acts of

dividing the data into blocks;

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transmitting block information notifying the block(s) to be transmitted; transmitting only the data included in the block(s) notified by the block information; and

using previously stored data in a data receiving component for the data included in the blocks(s) not notified.

27. (Previously Presented) A method for synchronous serial communication as described in claim 26, further comprising the acts of:

serially transmitting the data in a third mode in which current block information is omitted after comparing the current block information with previously transmitted block information; and determining that the current block information and the previous block information are the same; and

selecting the third mode for transmitting the data if the transmission time using the third mode is shorter than the transmission time using the first or second mode.